Canadian Radio-television and Telecommunications Commission
Conseil de la radiodiffusion et des télécommunications canadiennes

Telecom Regulatory Policy CRTC 2018-466

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Review of the regulatory framework for text-based message relay services

The Commission sets out a number of determinations regarding the regulatory framework for text-based message relay services (MRS). These determinations will (i) ensure that Canadians with a hearing or speech disability continue to have access to MRS, (ii) improve the quality of MRS, (iii) improve and increase access to MRS on mobile devices, and (iv) prepare MRS users and providers for the future as networks transition to Internet Protocol technology.

Background

1. Message relay services (MRS) are text-to-voice services that enable Deaf, deafened, hard-of-hearing, or speech-impaired (DHHSI) persons to make and receive telephone calls. The Commission currently requires wireline telephone service providers to make available two types of MRS 24 hours per day, seven days per week: Teletypewriter (TTY)[1] and Internet Protocol (IP)[2] relay services. Wireless service providers (WSPs)[3] are generally not required to provide MRS.

2. Wireline telephone service providers can meet their obligation to offer MRS to their retail customers by

    - providing the services themselves;

[1] In a TTY relay call, the operator communicates with the person with a hearing or speech disability via a TTY and with the person without such a disability via voice. The person with a disability accesses TTY relay service by using a TTY connected to wireline telephone service. The person without a disability dials a toll-free number to reach the operator using any telephone service.

[2] In an IP relay call, the operator communicates with the person with a hearing or speech disability via text and the person without such a disability via voice. The person with a disability accesses IP relay service by using any device capable of Internet access to reach the IP relay service provider's website and/or text messaging application. The person without a disability dials a toll-free number to reach the operator using any telephone service.

[3] WSPs include wireless carriers and resellers (including mobile virtual network operators) that provide mobile wireless services.

- purchasing MRS on a wholesale basis from an incumbent local exchange carrier (ILEC), such as Bell Canada or TELUS Communications Inc. (TCI);[4] or

- hiring a third-party call centre to provide the services.

3. ILECs are also required to make MRS available to other (i.e. non-incumbent) telephone service providers on a wholesale basis. To fund the provision of MRS, the incumbent telephone service providers are subject to retail and wholesale rates set by the Commission.

4. In recent years, several individuals, consumer advocacy groups, and groups that deal with issues of accessibility for DHHSI persons (accessibility groups) have raised concerns with the Commission regarding the quality of MRS.

5. Accordingly, the Commission began an MRS information-gathering exercise, which consisted of two parts:

   (i) issuing requests for information to the major telecommunications service providers (TSPs)[5] that offer wireline telephone service so that the Commission could obtain relevant financial and call data related to the provision of MRS; and

   (ii) conducting an online consultation through a discussion forum in June 2015 to understand what consumers need and expect from MRS.

6. DHHSI individuals who participated in the information-gathering exercise expressed concerns regarding the quality of MRS operators, long wait times to reach an MRS operator, the technical quality of MRS, a lack of awareness of MRS among Canadians with and without a hearing or speech disability, a lack of mobile platforms for IP relay service, having to subscribe to a wireline telephone service to access IP relay service, and many businesses and agencies refusing to accept MRS calls (due mainly to privacy and security concerns).

7. Based on the results of the information-gathering exercise, the Commission issued Telecom Notice of Consultation 2017-33, in which it initiated a proceeding to review the regulatory framework for MRS.

8. The Commission received interventions regarding the notice from the Conseil provincial du secteur des communications (CPSC); the Deaf Wireless Canada Consultative Committee (DWCC), the Canadian Association of the Deaf

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[4] In this proceeding, submissions were received from TELUS Communications Company (TCC). However, effective 1 October 2017, TCC's assets were legally transferred to TCI and TCC ceased to exist. For ease of reference, "TCI" is used in this decision.

[5] In this decision, "major TSPs" refers to ILECs and large competitive local exchange carriers such as Rogers Communications Canada Inc.

(CAD), and the Canadian National Society of the Deaf-Blind, Inc. (CNSDB) [collectively, DWCC et al.]; Maple Communications Group Inc. (Maple); Bell Canada, Bell Mobility Inc. (Bell Mobility), Bell MTS, Northwestel Inc., and Télébec, Limited Partnership (Télébec) [collectively, Bell Canada et al.]; Bragg Communications Incorporated, carrying on business as Eastlink (Eastlink); Cogeco Communications Inc. (Cogeco); Freedom Mobile Inc. (Freedom Mobile); Quebecor Media Inc., on behalf of Videotron Ltd. (Videotron);[6] Rogers Communications Canada Inc. (RCCI); Saskatchewan Telecommunications (SaskTel); Shaw Telecom G.P. (Shaw); TCI; and one individual.

Definition of "MRS providers" and obligations

9. In this decision, the term "MRS providers" refers to

    - carriers (i.e. ILECs, competitive local exchange carriers [CLECs], and carriers that offer and provide mobile wireless voice services) that have an obligation to provide MRS; and

    - non-carriers (i.e. resellers of local exchange services, resellers of mobile wireless voice services, and voice over Internet Protocol [VoIP] service providers) that have an obligation to provide MRS.

10. Unless otherwise stated, "MRS providers" excludes third-party wholesale service providers of MRS that are neither carriers nor non-carriers.

11. Where the Commission is imposing a regulatory obligation on MRS providers (specifically, in paragraphs 117, 128, 143, 151, 153, 154, 156, and 163), the obligation is being imposed on

    - MRS providers that are carriers, pursuant to section 24 of the *Telecommunications Act* (the Act). In addition, carriers that offer and provide MRS to non-carriers must do so in accordance with Telecom Regulatory Policy 2017-11; and

    - MRS providers that are non-carriers, pursuant to section 24.1 of the Act.

12. Where the Commission is imposing a regulatory obligation on MRS providers that are non-carriers, the Commission maintains the approach of directing carriers to include the obligation in their tariffs, service contracts, or other arrangements with these non-carriers, in accordance with Telecom Regulatory Policy 2017-11.

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[6] In this proceeding, submissions were received from Videotron G.P. However, effective 29 December 2017, all of Videotron G.P.'s assets and operations were transferred to Videotron Ltd., and Videotron G.P. was subsequently dissolved. For ease of reference, "Videotron Ltd." is used in this decision.

Issues

13. The Commission has identified the following issues to be addressed in this decision:

    - Should the Commission continue to mandate the provision of retail MRS?
    - Should the obligation to provide MRS be extended to WSPs that provide voice services?
    - Does the current delivery and funding model for MRS remain appropriate?
    - Does the current regime for wholesale MRS remain appropriate?
    - Is Commission intervention required to improve the quality of MRS?
    - Are the TSPs' current efforts to promote MRS sufficient?
    - What is the future of MRS, in light of the transition to IP-based networks in Canada?
    - What is the appropriate time frame for a review of MRS in the future?
    - Other matters

Should the Commission continue to mandate the provision of retail MRS?

14. The Commission's requirement for wireline telephone service providers to offer retail MRS applies to local exchange carriers (LECs), which comprise ILECs, wireless and wireline CLECs, resellers of local exchange services, and VoIP service providers.

15. Information submitted by major TSPs indicates that MRS call volumes have been declining over the past several years. High declines in TTY relay call volumes have not been offset by increases in IP relay call volumes. Despite the number of IP relay calls doubling since 2012, these calls account for only 14.5% of all MRS calls, while TTY relay calls account for the rest.

Positions of parties

16. All parties to this proceeding agreed that, despite the declining call volumes, MRS is valuable and a necessary telecommunications offering that many DHHSI individuals rely on.

17. Most TSPs and DWCC et al. agreed that it continues to be appropriate for the Commission to require LECs, resellers of local exchange services, and VoIP service providers to offer MRS to their customers.

18. DWCC et al. and many TSPs, including Bell Canada et al., Cogeco, SaskTel, Shaw, and TCI, acknowledged that customers are using other forms of communication, such as text messaging, social media, video messaging applications (apps), and

services such as Skype and Facetime, or video relay service (VRS).[7] However, they submitted that these alternatives do not replace the functionality of MRS (i.e. these services do not enable users with a hearing or speech disability to contact users who have no such disabilities [voice telephony users]), and there are circumstances in which it is necessary to use MRS. For example, communicating with businesses or government agencies is generally not possible via messaging apps or texting. Further, not all DHHSI persons use sign language; therefore, they cannot use VRS. Some alternatives may not meet users' needs. For example, DWCC et al. submitted that TTY relay service use remains high among deaf-blind individuals who rely on Braille, and senior citizens may be less technologically inclined and prefer to use the service.

Commission's analysis and determinations

19. The Commission considers that alternative services may not be suitable for all users, and notes that no parties objected to maintaining the existing requirement for the provision of retail MRS.

20. Accordingly, the Commission determines that it will continue to mandate the provision of retail MRS 24 hours per day, 7 days per week, by ILECs, CLECs, resellers of local exchange services, and VoIP service providers.

Should the obligation to provide MRS be extended to WSPs that provide voice services?

21. WSPs that provide voice services include mobile wireless carriers, including wireless CLECs, and resellers that provide mobile wireless services. WSPs are not currently required to offer MRS, unless they are registered with the Commission as a wireless CLEC.

Positions of parties

22. The CPSC, DWCC et al., and some participants in the online discussion were of the view that wireless service subscribers should have access to MRS. DWCC et al. and a number of participants in the online forum noted that some service providers require customers to have a wireline service subscription in order to access MRS. They argued that it was inappropriate for wireless service customers to pay for wireline service to access MRS on their mobile device, noting affordability issues arising from the requirement to have two subscriptions. Some participants suggested that this has had a negative impact on IP relay service adoption.

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[7] VRS enables people who use sign language to conduct telephone calls and communicate with voice telephone users using American Sign Language and Langue des signes québécoise. VRS connects a sign language user with another party via an operator who can interpret between sign language and spoken language.

23. Cogeco, RCCI, and TCI were of the view that WSPs should be required to provide MRS, subject to the limitations on specific wireless devices.

24. Similar to its arguments with respect to the requirement for wireline service providers to provide MRS, TCI noted that while wireless devices have apps that make communicating with some individuals easier, these devices do not enable DHHSI customers to contact voice telephony users using a conventional telephone number. TCI also submitted that communicating with businesses or government agencies is not generally possible by way of messaging apps or texting.

25. RCCI agreed with TCI's submission and noted that many customers have forgone traditional wireline telephone services and maintain only wireless services. RCCI added that, to reduce obstacles to the delivery and receipt of communications services, all WSPs should be required to provide MRS to ensure that all Canadians have access to reliable and convenient telecommunications services.

26. While Freedom Mobile did not expressly support an MRS requirement for WSPs, it submitted that the customer experience should not depend on whether a WSP is a wireless CLEC.

27. Bell Canada et al., Eastlink, and SaskTel did not believe that WSPs should be required to provide MRS. They argued that wireless devices already come equipped with features and applications that meet the communications needs of most MRS users, and that provide functionality similar to MRS, enabling wireless customers to communicate. Bell Canada et al. further argued that this was unlike wireline telephones, for which the availability of MRS is critical to enable DHHSI persons to communicate.

28. Bell Canada et al. argued that Bell Mobility and other WSPs are already providing MRS to their wireless service customers even without a regulatory requirement to do so. SaskTel noted that customers who use cellular devices can access the company's IP relay service using a mobile browser. Eastlink submitted that its understanding is that wireless devices are MRS-capable and that TTY devices can be attached to smartphones if they have the appropriate extension and 7-1-1 networks, making TTY relay service available.

29. Eastlink submitted that MRS usage has been declining and that, in light of other available options, mandating MRS provision by all WSPs would not be necessary.

30. Some TSPs indicated that TTY relay service does not work over voice over long-term evolution (VoLTE), to which some mobile networks are transitioning.[8]

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[8] VoLTE is the next evolution in wireless calling. The VoLTE technology platform enables users with a compatible handset to place and receive calls over the long-term evolution (LTE) network instead of the traditional voice network. Before VoLTE, only data was transmitted over the LTE network, and voice calls, which technically include TTY calls, were carried over the third-generation (3G) high-speed packet access (HSPA) network. When the networks fully transition to be LTE-only, there will be no fallback to 3G for transmitting TTY messages.

Bell Canada et al. and Freedom Mobile noted that mobile handset and equipment manufacturers that supply wireless carriers based in the United States may soon stop producing TTY-compatible wireless equipment. Bell Canada et al. added that the 3rd Generation Partnership Project (3GPP) committee that develops standards for the wireless industry has decided not to include TTY in VoLTE standards, and that network equipment and terminal vendors typically do not support TTY. Videotron added that VoLTE complicates the ability of WSPs to support TTY relay service.

Commission's analysis and determinations

31. Given that (i) the major wireless carriers currently allow their subscribers to access TTY relay service, but the service cannot be effectively provided over VoLTE networks, and (ii) equipment manufacturers are expected to stop producing TTY-compatible wireless equipment, the Commission determines that it would be inappropriate to mandate WSPs to provide TTY relay service. However, the Commission finds that it would be appropriate to impose certain MRS requirements on WSPs, specifically the requirement to provide IP relay service to their retail customers.

32. In Broadcasting and Telecom Regulatory Policy 2009-430 (the Accessibility Policy), the Commission contemplated the use of IP relay service on mobile devices. At the time, the Commission concluded that persons with disabilities were generally unable to influence the market sufficiently to obtain accessible telecommunications products and services, so market forces could not be relied upon to achieve the policy objectives set out in section 7 of the Act.

33. According to section 47 of the Act, the Commission must exercise its powers (i) with a view to implementing the telecommunications policy objectives set out in section 7 of the Act and ensuring that telecommunications services are provided in accordance with section 27 of the Act, which prohibits unjust discrimination; and (ii) in accordance with any orders made by the Governor in Council, which currently consists of the Policy Direction.[9]

34. As discussed in the Accessibility Policy, the determination of whether any discrimination is unjust and what steps to take in addressing such discrimination necessarily involves balancing competing objectives. In fulfilling its role in this regard, the Commission must (i) use leading Canadian human rights principles that recognize that equality is a fundamental value and a central component of the public interest, and (ii) act in a manner that is consistent with the *Canadian Charter of Rights and Freedoms*.

35. Wireless service customers who wish to subscribe to IP relay service for their mobile phones are being required by certain WSPs to sign up for wireline local voice service, even though such a subscription is not required from a technical perspective

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[9] *Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives*, P.C. 2006-1534, 14 December 2006

to access IP relay service from a mobile phone. Accordingly, the WSPs in question are preventing those customers from having the same choices as voice telephony users and, as a result, may be engaging in unjust discrimination, which is prohibited under the Act.

36. Further, as discussed above, alternatives to MRS may not be suitable for all users or in all cases.

37. No WSPs indicated that it would be cost-prohibitive to offer IP relay service to their mobile wireless service customers.

38. In light of the above, the Commission **directs** Canadian carriers and persons other than Canadian carriers that offer and provide mobile wireless voice services to provide IP relay service to their retail customers within **six months** of the date of this decision.

39. In both cases, this obligation may be met by providing the service directly or by outsourcing the provision of the service to a third party.

40. WSPs will be responsible for recovering their costs and may use their own discretion to determine how to do so. The Commission does not expect that a separate fee for IP relay service would be identified on subscribers' bills, but rather that the cost of offering IP relay service would be included in the cost of providing the subscribers' telecommunications services.

Does the current delivery and funding model for MRS remain appropriate?

Should the current decentralized model for delivering and funding MRS be maintained or should MRS be structured and funded similar to VRS?

41. The two relay services in Canada (MRS and VRS) follow two different delivery and funding models: MRS, which is decentralized, and VRS, which is centralized.

42. Under the MRS model, MRS providers are required to offer MRS to their customers directly or via a wholesale provider, pursuant to either a tariff or a condition under section 24 of the Act. ILECs' costs to provide MRS are recovered through tariffed rates, whereas other MRS providers have flexibility in how they recover their costs.

43. Under the VRS model, VRS is offered, overseen, and implemented by an independent VRS administrator (the Canadian Administrator of VRS (CAV), Inc. [CAV]), and is funded via TSP contributions to the National Contribution Fund (NCF) pursuant to section 46.5 of the Act.

Positions of parties

44. DWCC et al. suggested that the Commission consider amalgamating all text-based MRS into one or two national service providers. They submitted that the current model should be overhauled and that a centralized administrator would be beneficial

and more streamlined, providing a single point of contact to submit complaints or to request improvements.

45. Similarly, Maple was of the view that having MRS under the control of a Deaf-owned and operated company would result in such a company continually investing into improving the service.

46. Bell Canada et al., Shaw, TCI, and Videotron all argued that changes to the delivery and funding model were not necessary and would be administratively complex for TSPs, particularly for a service that is in decline. Bell Canada et al. argued that a centralized model would run counter to the requirements of the Policy Direction to rely on market forces to the maximum extent feasible.

47. Bell Canada et al. added that restructuring the delivery of MRS to adopt the VRS funding model (i.e. via a centralized contribution fund) would inevitably interfere with established contractual rights and obligations, and could be punitive to numerous TSPs.

48. In examining the merits of a centralized VRS model, Bell Canada et al. noted that the skills needed to become an MRS operator are far more readily available than for VRS, while TCI argued that the NCF should be reserved only for those services that meet the definition of a basic telecommunications service under section 46.5 of the Act, and that MRS, as a legacy service, does not qualify as a basic telecommunications service.

49. With respect to which TSPs should be required to fund the provision of MRS, DWCC et al. and Maple were of the view that all TSPs need to be accountable for the provision of MRS, including WSPs and Internet service providers (ISPs). Bell Canada et al., Freedom Mobile, RCCI, Shaw, TCI, and Videotron were of the view that the Commission should not extend funding requirements to ISPs. Freedom Mobile, Shaw, and Videotron added that because MRS is associated with voice telephone calls, it would be inappropriate to require ISPs to fund the service. SaskTel, however, was of the view that collecting funding from ISPs would be appropriate since IP relay service is delivered over the Internet and interfaces with a computer.

Commission's analysis and determinations

50. Although a centralized delivery model may result in improvements to the quality of MRS, the Commission considers that the benefits of transitioning the current MRS to such a model would not outweigh the costs, since TTY relay service is a legacy service that is expected to be replaced with IP-based services. Furthermore, the requirements set out in paragraphs 117, 128, 143, 151, 153, 154, 156, and 163 below will improve the quality of MRS without the need to migrate to a new delivery model.

51. Accordingly, the Commission determines that it will not make any changes to the MRS delivery model at this time.

52. Given that the Commission is not changing the MRS delivery model, it would be inappropriate for the Commission to change the MRS funding model. Therefore, MRS providers should continue to recover their costs from their subscriber base, including by way of tariffs for ILECs. Furthermore, given that MRS is an adjunct to voice telephone service and that ISPs are not voice telephone service providers, it would be inappropriate for the Commission to require ISPs to fund MRS.

53. Accordingly, the Commission determines that it will not make any changes to the MRS funding model at this time.

Should the Commission maintain the frozen rate treatment or should the ILECs be required to file new tariffs?

54. The ILECs' costs for providing retail MRS and wholesale MRS are generally recovered by way of Commission-approved tariffed monthly rates on a per-residential and -business network access service (NAS) basis (i.e. based on the number of end-users), as set out in the ILECs' general tariffs.

55. In Telecom Decision 97-9, the Commission established price cap regulation for the large ILECs, and determined that rates for certain services, including MRS, would be frozen for the duration of the price cap period. The rates for MRS have remained frozen since that decision.[10]

56. Information collected from TSPs during the current proceeding and the proceeding that led to Telecom Regulatory Policy 2014-187 (the VRS Policy) indicated that between 2008 and 2016, the aggregate amount of money collected by ILECs to provide MRS exceeded the amount spent to provide MRS to customers.

Positions of parties

57. With respect to the issue of possible surpluses, Bell Canada et al. noted that the manner in which MRS revenues were reported over the last number of years has overstated the revenues and given the appearance that MRS providers have ended up with significant surpluses. Specifically, they claimed that they had incorrectly imputed an MRS charge and revenues associated with forborne NAS, which overstated the revenues collected with respect to MRS. Bell Canada et al. claimed that this was an error, since they do not charge or impute an MRS charge to their forborne NAS.

58. TCI argued that various costs (e.g. billing costs, network costs, and indirect costs associated with using the underlying ILEC network to provide MRS) were not accounted for when the Commission analyzed the costs to provide MRS in Canada.

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[10] The freeze was extended to the MRS rates of the small ILECs in 2001, and then to Télébec as well as to TCI in its Quebec operating territory in 2002. The Commission maintained this freeze in Telecom Decisions 2002-34 and 2007-27. In Telecom Decision 2008-17, the Commission determined that most rates for what it defined as "public good" services, including MRS, would continue to be frozen.

59. Bell Canada et al., RCCI, and TCI were of the view that no changes should be made to either the wholesale or retail tariffed rates. TCI added that the rates being charged are just and reasonable, and that if a full cost study were to be performed, it would likely show that costs are in line with revenues collected.

60. However, Cogeco submitted that given the competitiveness of the retail wireline telephone service market associated with the provision of MRS, the retail rates for MRS should be forborne from regulation for all service providers. Similarly, Shaw did not believe that ILECs need to continue to be compensated through tariffs for providing MRS to their customers when their competitors are not similarly compensated, and supported the removal of ILEC funding for the provision of retail MRS through tariffed rates. Other TSPs submitted that they were not in a position to comment on the retail tariffs.

Commission's analysis and determinations

61. The Commission determines that it will maintain the existing freeze and will not require the ILECs to file new tariffs.

62. While the information collected regarding MRS revenues and expenditures suggests that annual surpluses are likely occurring, the Commission recognizes that the ILECs are entitled to a reasonable rate of return.

63. Further, any concerns related to excessive surpluses beyond a reasonable rate of return will be mitigated by the Commission determinations outlined below requiring ILECs to make specific improvements to MRS.

64. The Commission is of the view that the MRS revenues that TSPs were reporting over the last number of years were accurate. In Telecom Decision 2005-35, the Commission indicated that MRS was not considered a local exchange service with respect to the proceeding initiated by Telecom Public Notice 2005-2. Accordingly, MRS is not forborne from regulation; therefore, contrary to Bell Canada et al.'s assertion, the ILECs' tariffed rates for MRS apply to both forborne and non-forborne exchanges.

65. Because the Commission did not review the specific tariffed rates for MRS in this proceeding, a full cost study in support of the rates was not requested, given the burden associated with such a request. Thus, as submitted by TCI, various costs (e.g. billing costs, network costs, and indirect costs associated with using the underlying ILEC network to provide MRS) that would be included in the analysis of a tariffed rate were not accounted for in the preliminary assessment of possible surpluses.

66. With respect to the freeze, the key benefits are (i) stable revenue for ILECs so that they can plan and pay for ongoing maintenance of MRS, including maintaining functionality and upgrading equipment; (ii) administrative efficiency for ILECs; and (iii) public good services (e.g. MRS) for consumers at stable and reasonable rates.

67. The Commission notes that most TSPs were not opposed to maintaining the freeze, with Bell Canada et al., RCCI, and TCI explicitly supporting the current tariff approach. While both Cogeco and Shaw were of the view that the current retail tariff rates should be removed or forborne from regulation, neither of these parties provided sufficient evidence to suggest that forbearance is appropriate.

Does the current regime for wholesale MRS remain appropriate?

68. The Commission currently requires ILECs to offer wholesale MRS in their operating territories pursuant to a Commission-approved tariff. This enables LECs, resellers of local exchange services, and VoIP service providers to meet their requirement to offer retail MRS to their customers.

69. As is the case with retail MRS, ILECs' costs for wholesale MRS are recovered through tariffed rates, most of which have been frozen since 1998. These rates are based on Phase II costs,[11] and include a markup of approximately 25%.

70. Although the Commission has permitted ILECs and large cable carriers to enter into commercially negotiated agreements with competitors for the provision of various wholesale wireline services,[12] the Commission has never explicitly permitted off-tariff agreements for public good services such as wholesale MRS.

Positions of parties

71. TSPs generally agreed that the current requirement for ILECs to offer wholesale MRS is unnecessary, since the wholesale market is competitive; therefore, MRS providers need not rely on the wholesale MRS offered by ILECs to meet their obligation to offer retail MRS to their own end-users. Further, TCI argued that all that the Commission needs to do is to require all TSPs and WSPs to provide MRS for their customers, and that the availability of MRS will naturally develop from that requirement since MRS providers would no longer need to be the provider of the local telephone line.

72. Bell Canada et al. submitted that their wholesale market share has declined significantly over the last number of years, since TSPs operating within Bell Canada's territory have migrated to alternative suppliers and do not rely on Bell Canada's wholesale MRS to make the service available to their own end-users. Bell Canada et al. submitted that they are the only provider in their operating territory subject to tariffed terms and conditions, and that the service terms and rates that they are required to apply in their tariff have removed their ability to respond to competitor offers, reducing competition for the provision of wholesale MRS.

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[11] When establishing just and reasonable service rates, the Commission generally uses Phase II costing and applies a markup or contribution to fixed structure costs. Phase II costs are causal, incremental, and prospective costs that are required to provide a service. Phase II costing principles were set out in Telecom Decision 79-16 and amended in subsequent Commission decisions.

[12] See Telecom Regulatory Policies 2009-19 and 2012-24.

73. TCI added that it does not make sense in a competitive marketplace that some wholesale service providers would not be regulated but that other wholesale service providers, simply because they are ILECs, would subject to rate regulation.

74. RCCI acknowledged the competitive nature of wholesale MRS but did not consider that there is a need to make any significant changes to the current regime.

75. Bell Canada et al. and TCI submitted that it would be appropriate for the Commission, as part of this proceeding, to forbear from regulating wholesale MRS pursuant to subsection 34(1) of the Act. They argued that forbearance would increase the competitiveness of the market, fostering the policy objectives set out in the Act, and would promote compliance with the Policy Direction.

76. Bell Canada et al. further submitted that the Commission should, alternatively, forbear from regulating wholesale MRS pursuant to subsection 34(2) of the Act, since competition for wholesale MRS is sufficient to protect the interest of end-users. TCI added that since there is no barrier to entry to provide wholesale MRS, the market itself is competitive, with suppliers from Canada and abroad offering the service.

77. Bell Canada et al. added that if the Commission does not determine that forbearance of wholesale MRS is appropriate, the Commission should permit ILECs to enter into off-tariff agreements for wholesale MRS.

78. There was a general consensus among TSPs that ILECs should be permitted to enter into off-tariff agreements for the provision of wholesale MRS.

Commission's analysis and determinations

79. The Commission determines that it would be appropriate to maintain the existing requirement for ILECs to offer wholesale MRS in their operating territories.

80. Since 2006, the Commission has undertaken two major public consultations to review the regulatory framework for wholesale wireline services. The resulting decisions classified MRS as

    - a public good service in Telecom Decision 2008-17, which classified wholesale services into six categories. The Commission determined that public good services provide an important social benefit and are therefore mandated; and

    - a mandated service in Telecom Regulatory Policy 2015-326 (the Wholesale Wireline Decision). The mandated category resulted from collapsing five categories, including public good, into a single category.

81. The Commission concluded in the Wholesale Wireline Decision that when informing, supporting, or reversing a decision to mandate the provision of wholesale

public good services, special treatment would be given for policy reasons of social or consumer welfare, public safety, or public convenience.

82. The Commission is of the view that, as was the case in 2015, MRS continues to be a public good service. The Commission notes that all parties to this proceeding acknowledged the continuing necessity of MRS for DHHSI Canadians, especially those who do not communicate via sign language.

83. Despite the general consensus amongst TSPs that the market for wholesale MRS is competitive, there is no compelling evidence on the record of this proceeding to demonstrate that a sufficient level of competition in the market exists to protect the interests of users if the Commission were to either grant forbearance or no longer mandate the provision of wholesale MRS.

84. In light of the above, ILECs are to continue to provide wholesale MRS 24 hours per day, seven days per week, in their operating territories.

85. Given that wholesale MRS continues to be mandated, it would not be appropriate to address the forbearance requests made by Bell Canada et al. and TCI. Consistent with the Act, ILECs must provide the mandated wholesale MRS only under the terms and conditions set out in the tariff.

86. However, the Commission notes that since 2008, ILECs and large cable carriers (collectively, incumbent carriers) have generally been able to enter into off-tariff agreements with competitors for various categories of wholesale services (other than public good services), provided there is a default tariff in place that the competitors could use if they are unable to negotiate an agreement. The Commission has generally found that permitting off-tariff agreements gives incumbent carriers and competitors greater flexibility in making provisioning arrangements, and that doing so is consistent with the Policy Direction.

87. Regarding Bell Canada et al.'s request that ILECs be permitted to enter into off-tariff agreements for wholesale MRS, the Commission considers that allowing off-tariff agreements for wholesale MRS would give ILECs the flexibility they are seeking to provide more competitive service offerings. The Commission considers that wholesale customers would continue to be protected, given that if a company is not satisfied with a particular negotiation, it can continue to avail itself of a Commission-approved tariff that contains rates, terms, and conditions that are just and reasonable.

88. A Commission forbearance determination permitting companies to enter into off-tariff agreements is required for ILECs to enter into any agreement to offer the mandated wholesale MRS using rates, terms, or conditions different from those set out in the tariff. The Commission sets out this determination below.

Findings of forbearance

89. The Commission finds, as a question of fact, that to forbear from the exercise of certain of its powers is consistent with the Policy Direction and the policy objectives, pursuant to subsection 34(1) of the Act.

90. Pursuant to subsection 34(3) of the Act, the Commission finds that forbearance, to the extent set out in this decision, with respect to the provision of wholesale MRS pursuant to negotiated agreements will not likely impair unduly the establishment or continuance of a competitive market for the services in question.

91. Pursuant to subsection 34(4) of the Act, the Commission declares that, as of the date of this decision, sections 25, 29, and 31, and subsections 27(1), 27(5), and 27(6) of the Act, do not apply to the provision of wholesale MRS pursuant to negotiated agreements.

92. The Commission will retain its powers with respect to section 24 and subsections 27(2) and 27(3) of the Act to the extent necessary to address any issues that may arise.

93. In light of the above, the Commission permits ILECs to enter into off-tariff agreements for wholesale MRS. The Commission **directs** parties to file copies of any off-tariff negotiated agreements entered into, in confidence if they wish, as well as general summaries of these agreements for the public record, within **15 days** of the agreements being entered into.

Is Commission intervention required to improve the quality of MRS?

Would quality of service standards be appropriate?

94. The last time the Commission considered quality of service standards for MRS was during the proceeding that led to Telecom Decision 97-16, in which the Commission reviewed general quality of service indicators for ILECs across Canada. During that proceeding, CAD proposed that quality of service standards be considered for MRS. However, the Commission decided that a separate indicator for MRS was not required, given that there was no evidence of poor service on the record of that proceeding.

95. However, more recently, during the proceedings that led to the VRS Policy and to Telecom Regulatory Policy 2016-496 (the Basic Telecommunications Service [BTS] Policy), various parties indicated that consumers are dissatisfied with the quality of MRS, in particular IP relay services.

96. Although the Accessibility Policy contemplated that IP relay service would be accessed via mobile devices, many DHHSI consumers indicated that they are having difficulty using the service on mobile devices.

Positions of parties

97. During this proceeding, all parties agreed that it is important that DHHSI consumers have access to high-quality telecommunications relay services.

98. A survey conducted by DWCC, which included 437 respondents, and the online MRS discussion forum showed that DHHSI Canadians have concerns about the quality, accessibility, and functionality of MRS, and feel that there is a need for improvement. Consumers in general cited long wait times and substandard message relaying quality, among other concerns.

99. DWCC et al. requested that certain standards be imposed on MRS to address the quality of service issues.

100. Although Bell Canada et al., Freedom Mobile, and Shaw supported the Commission imposing quality of service standards, RCCI, SaskTel, TCI, and Videotron were of the view that there is no need for further regulatory requirements with respect to MRS quality of service. RCCI indicated that TSPs are already committed to meeting certain internal quality of service standards without a regulatory requirement to do so, and that, since 2012, the Commission has regularly requested and received information from TSPs regarding MRS quality of service indicators. Eastlink, RCCI, SaskTel, and Videotron submitted that they were not aware of any quality issues with MRS and have received very few complaints. SaskTel added that its contract with its third-party MRS provider has service performance metrics and associated penalties for failure to meet them, which ensures that the services provided are of high quality and meet the needs of end-users.

Commission's analysis and determinations

101. The Commission determines that it will implement quality of service standards for MRS. The Commission considers that implementing such standards will not be onerous for wholesale service providers or customers.

102. Paragraph 7(b) of the Act sets out the following policy objective: to render reliable telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada. DHHSI Canadians have been raising concerns about the quality, accessibility, and functionality of MRS since the proceeding that led to the VRS Policy took place five years ago.

103. The Commission reached its determination to implement quality of service standards by first considering the experience of a voice telephony user in accessing and using a telephone service. The Commission used that as a baseline to identify whether MRS is providing DHHSI consumers a reasonable level of access to and use of telephone services in comparison to voice telephony users. In this regard, the Commission has identified two overarching objectives for MRS:

- provide a reasonable level of service quality; and

- provide telephone access in a way that is similar to the way in which it is provided to other subscribers.

104. As noted in paragraph 56, there may be evidence of annual surpluses from the provision of MRS. However, the Commission considers that any further regulatory intervention to improve the quality of MRS may require increased spending by TSPs.

105. The Commission notes that TSPs that provide MRS via a third-party wholesale service provider have in place multi-year contractual agreements that contain terms and incentives for the wholesale provider to deliver MRS to a specific level of quality. However, DHHSI Canadians and accessibility groups have expressed concerns about the quality of MRS. Furthermore, there have been concerns about long wait times for MRS operators to respond to calls. Therefore, the Commission has determined that the agreements are not sufficient to ensure that MRS is delivered with an adequate quality of service, and that further regulatory intervention is required to improve the quality of MRS.

106. Furthermore, since 2012, the Commission has regularly requested and received information from TSPs regarding MRS quality of service indicators. Therefore, the Commission is aware that those parties have systems in place to measure quality of service.

107. In light of the above, the Commission sets out a number of quality of service standards in paragraphs 117, 128, 143, 151, 153, 154, 156, and 163 below. If a particular MRS provider is faced with a unique barrier that would make it technically impossible or financially unreasonable to implement the regulatory obligations listed below within the time frames provided, that provider can file an application to obtain an extension from the Commission. However, the MRS provider is required to provide detailed evidence and rationale demonstrating that the burden it faces is unreasonable.

Would a standard for call answer time be appropriate?

Positions of parties

108. In general, TSPs indicated that their current internal call answer standard is that 80% of calls are answered within 20 seconds (i.e. 80/20). However, accessibility groups argued that MRS users frequently experience long wait times to reach operators. They reported wait times of up to 35 minutes.

109. TCI argued that it makes real-time adjustments daily to attempt to achieve the 80/20 targets. TCI added that call volumes are difficult to predict, and with the extremely low usage of TTY relay service (approximately 775 calls per day) and IP relay service (approximately 225 calls per day), even minor spikes can result in longer-than-standard wait times for callers. For the entirety of TCI's MRS business

(including retail and wholesale service offerings), the company satisfied its internal 80/20 standard 81.8% of the time in 2015 and 76.6% of the time in 2016. Staffing issues, combined with unanticipated and unprecedented calling pattern changes, resulted in it failing to meet its 80/20 target in 2016. Adoption of VRS in Canada has further complicated TCI's projections because as VRS call volumes increase, MRS calls decrease. The lower the call volume, the fewer operators are assigned, so usage spikes result in longer-than-usual wait times. TCI indicated that in 2016, the average wait time to connect with an MRS operator was 23.97 seconds for TTY relay service and 45.59 seconds for IP relay service.

110. DWCC et al. requested that the Commission mirror the 85/10 standard set by the Federal Communications Commission (FCC) in the United States, and draw from the FCC's definition of call answer time, which states that "the ten seconds begins at the time the call is delivered to the Relay Service facility's network."

111. However, Bell Canada et al. submitted that a Commission-imposed standard that is more onerous than 80/20 would be costly for their third-party provider of IP relay service and would provide no functional benefit to end-users, since users are more concerned about long wait times than whether a call is answered in 20 seconds versus 10 seconds. Bell Canada et al. argued that a universal application of the 80/20 standard for MRS would ensure that end-user complaints about long wait times are fully addressed by the Commission. Bell Canada et al. noted that a 20-second call wait time is equivalent to four rings. TCI added that the 80/20 model is an industry standard in operator services for traditional operator service offerings such as directory assistance, operator-assisted dialing, alternative billing, and toll-free directory assistance.

112. Bell Canada et al., Shaw, and TCI indicated that, in the event the Commission imposes call answer time standards more onerous than 80/20, they would incur additional costs, and that the new standards would take up to six months to implement.

Commission's analysis and determinations

113. The Commission determines that standards for MRS call answer time are necessary.

114. While TSPs generally indicated that they have an internal 80/20 call standard, and that contracts between wholesale service providers and wholesale service customers generally have incentives to ensure compliance with the standard, most providers have average call answer times that exceed 20 seconds. Based on the call wait time statistics provided to the Commission, it appears that in 2016, this internal standard was not achieved for TTY relay service for half of the TSPs providing information. Further, most of the TSPs did not achieve this internal standard for IP relay service. This leads the Commission to believe that the contracts are not being adequately enforced.

115. During the online consultation, DHHSI individuals indicated that when they place an IP relay call, an operator may send a "hello" message within 20 seconds, but that a long pause would follow until the operator provides his or her name and engages with the DHHSI individual. As such, the Commission is concerned that the reported IP relay wait times may not be an accurate representation of actual wait times, in the event that TSPs are measuring call answer times to end when the initial "hello" message appears, rather than when the operator starts engaging with the individual moments later. To mitigate this risk, the Commission considers that the definition of call answer time should specify being responded to by a live MRS operator.

116. The Commission is of the view that it would be appropriate to phase in a standard for call answer time, starting with the immediate imposition of an 80/20 standard, since MRS providers' existing contracts already generally require such a standard, and no contract filed on the record of this proceeding contains a standard that is lower than 80/20. The Commission considers that its 80/20 standard should be increased to 85/10 in a year's time in order to improve the functional equivalence of MRS and to further protect DHHSI persons from delays in reaching an MRS operator. The Commission considers that these standards would not be financially burdensome to MRS providers and would give them sufficient time to hire additional operators to ensure that the new standard will be met.

117. Accordingly, the Commission establishes the following retail MRS quality of service standard for MRS providers, **effective the date of this decision**:

- 80% of calls each month must be responded to by a live MRS operator within 20 seconds. In **12 months from the date of this decision**, this standard will be raised to 85% of calls being responded to by a live MRS operator within 10 seconds. MRS providers that engage a third-party service provider must ensure that the provider meets these requirements.

Would an MRS operator typing speed standard be appropriate?

Positions of parties

118. Bell Canada et al. reported that their current internal MRS operator typing speed standard is 40 to 45 words per minute (WPM) with a 95% transcription accuracy, while TCI submitted that its current internal typing speed standard is 40 WPM or more. TCI added that a large majority of its MRS operators' typing speeds fall into the 40 to 50 WPM range with a 95% transcription accuracy rate, with only three operators achieving 60 WPM. TCI also filed typing speed results for 85 of its MRS operators.

119. MRS providers submitted that they have received very few complaints regarding typing speeds; however, accessibility groups requested that MRS operators have higher typing speeds. For example, DWCC et al. supported a 60 WPM standard with a 95% transcription accuracy, and noted that a special interest group in the United Kingdom reported that 40 WPM is too slow. Maple submitted that a range of 45 to 60 WPM would be appropriate. The CNSDB submitted that having a higher

typing speed would help get information to the screen more quickly during the relayed conversation, and would present less of a delay, especially in the case of emergencies.

120. However, Bell Canada et al. submitted that many MRS users find that their MRS operators type too fast, even though they have a typing speed of 40 to 45 WPM. Bell Canada et al. added that the modems used to relay TTY messages are not technically capable of relaying messages faster than a maximum rate of approximately 60 WPM. The CNSDB argued that MRS users who use larger fonts can find it challenging to read the text scrolling on the screen, but that they could ask the MRS operator to slow down, as necessary.

121. Neither Bell Canada et al. nor TCI were of the view that Commission-imposed quality of service standards would be necessary for typing speeds. Bell Canada et al. added that through the hiring and training process, they evaluate MRS operator typing speeds. TCI indicated that MRS operators who do not display adequate typing speeds may be reassigned to non-MRS-related functions or have their employment terminated.

122. Bell Canada et al., Shaw, and TCI indicated that, in the event the Commission imposes typing speed standards above 45 WPM, they would incur additional costs and that it would take several months to implement the new standards.

Commission's analysis and determinations

123. The Commission determines that a typing speed standard for MRS operators is necessary.

124. The Commission notes that the average typing speed of the 85 MRS operators for which TCI filed results was 43 WPM, with an average transcription accuracy of 94%. The range of typing speeds was vast: the 10 slowest MRS operators had an average speed of 25 WPM, while the 10 fastest averaged 68 WPM.

125. Canadian MRS providers currently receive very few complaints regarding typing speeds. Despite concerns raised on the record of this proceeding that certain MRS customers have advised providers that operators are typing too fast, the Commission is of the view that those concerns are unwarranted, since DHHSI individuals could ask them to slow down.

126. Regarding DWCC et al.'s request for a 60 WPM standard, the Commission notes its determination in Telecom Decision 94-9 that the majority of TTY devices transmit and receive messages at 60 WPM, and that it would be unreasonable to direct MRS operators to attain a typing speed that is faster than most machines can handle.

127. In light of the above, the Commission is of the view that a 45 WPM standard with a transcription accuracy of 95% for each MRS operator would be reasonable. Implementing this standard would not be financially burdensome on MRS providers, and would address substandard message relaying quality concerns raised on the

record of this proceeding, since no MRS operator would type slower than 45 WPM or have a transcription accuracy of less than 95%. Furthermore, it would be reasonable to require MRS providers to measure typing speeds once a year, using a statistically random sample of MRS operators, to allow for monitoring of compliance.

128. Accordingly, the Commission establishes the following retail MRS quality of service standard for MRS providers, **effective the date of this decision**:

- Each MRS operator must have a typing speed of 45 WPM, with a 95% transcription accuracy rate. MRS providers must monitor the typing speeds of the MRS operators and may measure typing speeds once a year using a statistically random sample of MRS operators. Alternatively, MRS providers that engage a third-party service provider must ensure that the provider meets these requirements.

What should be done to enable DHHSI customers to easily access and use IP relay service on wireless devices?

Positions of parties

129. Accessing IP relay service from a mobile phone was a key issue for many parties. Specifically, DWCC et al. submitted that people who are Deaf, deaf-blind or hard of hearing are unable to capture the full screen or use MRS from their mobile devices effectively, and no longer want to be restricted to their desktops and laptops. The CNSDB submitted that the current IP relay web portal is extremely difficult to use for Deaf-Blind persons who use Braille display technology. Maple added that the IP relay service's interface is frustrating to use on mobile devices because a lot of zooming and panning is required to interact with the service. The CPSC submitted that low adoption of IP relay service may be due, in part, to the absence of mobile options.

130. While some TSPs stated that it is technically possible to use IP relay services on mobile devices, others submitted that the IP relay web portal is optimized for desktop and laptop web browsers only, and was not designed for use on some wireless devices with smaller screens, such as smartphones with screens measuring less than 5.5 inches. Since the current portals were originally designed for computer screens, all TSPs agreed that changes are needed to make MRS mobile-friendly. RCCI, Shaw, and TCI indicated that they are exploring the feasibility of making IP relay service more mobile-friendly. Bell Canada et al. indicated that they would support any obligation for all IP relay service providers to make a new interface available.

131. Shaw added that its IP relay web portal is World Wide Web Consortium (W3C)[13] Level A compliant,[14] while Freedom Mobile and TCI indicated that their portals do not meet this accessibility standard. TCI noted that it has not had any complaints regarding its portal not meeting the standard, but that it has committed to making the necessary changes to meet it.

132. Parties agreed that something needs to be done to make MRS easier to use on mobile devices, but proposals about what should be done varied greatly. The two suggestions made were to develop an IP relay app, or redesign the current IP relay web portal to be compatible with mobile devices.

Develop an IP relay app

133. DWCC et al. indicated that an IP relay app would be better than a mobile-friendly website at meeting the diverse needs of MRS users. They noted that in the United States, Sprint is an IP relay provider that offers such an app. CNSDB added that the Sprint app has Braille display device connectivity. DWCC et al. submitted that Sprint has confirmed that it is willing to work with Canadian IP relay service providers to redesign the app to provide a Canadian version available in both English and French. However, TCI noted that the development costs associated with the Sprint app are recovered by the customer base in the United States, which is far larger than the one in Canada.

134. DWCC et al. further requested that the Commission mandate MRS providers to offer an IP relay app that meets all W3C Web Content Accessibility Guidelines (the W3C Guidelines) 2.0 standards,[15] and that MRS providers engage Canadians who are Deaf, deaf-blind, or hard of hearing in the design and testing of the app.

135. Shaw submitted that it is currently working with its vendor to develop an IP relay app.

136. Bell Canada et al. and TCI disagreed with the proposal to develop an IP relay app. They argued that such an app would be short lived, since IP relay use is declining and the use of other communications technologies (e.g. VRS, real-time text [RTT],[16] Short Messaging Service [SMS], and social media) is increasing. There would also be significant costs to remedy compatibility issues and prepare the frequent updates required to maintain the app. TCI added that it would be far more efficient to save investment dollars for the near-term release of RTT, rather than for an IP relay app.

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[13] The W3C is the main international standards organization for the Internet.

[14] In order to accommodate different situations that may require or allow greater levels of accessibility than others, there are three levels of conformance. Level A is the lowest of the three levels.

[15] TheW3C Guidelines are part of a series of guidelines published by the Web Accessibility Initiative of the W3C.

[16] RTT is an IP-based messaging protocol that enables text to be sent immediately as it is typed, without the need to press “send.” This provides instant feedback as to the status of communication. RTT is expected to become one of the standard messaging platforms in all mobile phones.

However, the CNSDB expressed concerns that an RTT app or platform would not be commercially available for three years, and that once it is available, it may not be accessible to the deaf-blind or easy to use.

Develop a mobile-friendly IP relay web portal

137. Bell Canada et al. and TCI proposed to redesign the current IP relay web portal rather than developing an app, because the web portal would best address the concerns made by user groups and would be the most appropriate approach to making IP relay service mobile.

138. TCI added that the costs to develop and implement a W3C-compliant mobile-friendly IP relay web portal would be lower than the costs to develop a new app.

139. Shaw, however, indicated that it is already working to make its MRS web portal more mobile-friendly and to develop an app.

140. While DWCC et al. indicated that a mobile-friendly web portal would improve the mobility of MRS, Maple was concerned that the portal's interface would be unintuitive in emergency situations. Furthermore, the CNSDB was concerned that a mobile interface would lack accessibility features that deaf-blind users require.

Commission's analysis and determinations

141. Given that the trend of wireline cord-cutting has been on the rise among Canadians, the ability for DHHSI persons to access and use MRS on mobile devices is becoming increasingly important. The Commission agrees that although current IP relay web portals are technically functional on mobile devices, they do not meet the needs of the DHHSI population. The Commission considers that an IP relay app, as Shaw is developing, would appear to benefit DHHSI Canadians more than a mobile-friendly web portal would.

142. However, the Commission acknowledges that RTT relay service and accompanying apps are expected to be available in a three-to-five-year time frame to residential users, and that, from a TSP's perspective, investing in an IP relay app may not appear to make financial sense.

143. Accordingly, rather than requiring MRS providers that are WSPs to make either a mobile-friendly IP relay web portal or app available, the Commission **directs** those WSPs to make enhanced functionality available to IP relay users. Regardless of the platform (e.g. a web portal or an app), DHHSI customers should have equivalent functionality available to them, including minimum requirements 3 to 10 set out in Appendix 1 to this decision. Any app developed must be compatible with common operating systems (e.g. iOS and Android). WSPs that provide MRS via a third-party service provider must ensure that the provider meets these minimum requirements.

What should be done to improve the functionality of IP relay service?

Positions of parties

144. DWCC et al. submitted that IP relay service currently presents challenges, particularly for deaf-blind persons, which could be a matter of life and death in emergency situations. DWCC et al. made several requests to improve the functionality of IP relay service for DHHSI persons, as follows:

- IP relay Internet platforms should be upgraded to a more responsive web design theme, with operating system, browser, and device (smartphone and tablet) interoperability. This includes customization of background colours, font colours, font sizes, screen adjustment configuration, and notification alerts (e.g. vibration or a flashing light);
- IP relay service should be compatible with Braille displays;
- there should be responsive back and forth interactability using the smartphone or tablet operating systems;
- there should be an easier way for IP relay calls to be reconnected if there is a disconnection;
- each DHHSI customer should be offered a unique 10-digit number that a hearing caller may dial;
- voice telephony users should be able to leave a message with a DHHSI customer; and
- DHHSI customers should be able to receive messages via text or email.

145. Bell Canada et al. and TCI submitted that certain functionalities sought by DWCC et al. are already present. For example, TCI noted that, as with many IP applications, the IP relay application must remain running on the customer's device or computer in order to be initiated. Once the application is running, the customer can be "called." If the customer is not logged into the application when a call attempt is made, the caller can leave a message and the call can be returned at a later time.

146. In addition, Bell Canada et al. submitted the following in regard to using IP relay service on mobile devices:

- receiving incoming calls on a mobile device is impractical;
- incoming calls do not generate an event that can be easily captured and displayed on a mobile device;
- users are alerted of an incoming call by a pop-up window, which sometimes appears off-screen on some mobile devices with lower screen resolutions;
- in order to receive an incoming call, the mobile device has to be active (i.e. the screen must be turned on), the end-user must be looking at the screen, and the pop-up window must be visible; and

- it is difficult to remain logged in to the IP relay portal for extended periods of time. On a wireless device, the user will be logged out when the device screen locks, which may be after only a few minutes.

147. DWCC et al. and Maple requested that voice carry over (VCO)[17] service be offered via IP relay service. Bell Canada et al. and TCI replied that VCO services are available through IP relay service for any customer wishing to take advantage of this functionality.

Commission's analysis and determinations

148. The Commission determines that certain requirements must be met to improve the functionality of IP relay service.

149. The Commission is concerned as to why certain TSPs have not yet addressed the Commission's encouragement, as stated in the Accessibility Policy to adopt the W3C Guidelines in the design of IP relay web portals, given that such a portal is a website that serves customers with disabilities. The Accessibility Policy notes that these Guidelines should apply to customer service portions of TSPs' websites, which would include IP relay web portals.

150. In addition, the 2016 BTS Policy set out an expectation that all WSPs' websites would meet the W3C Guidelines by June 2017. This expectation was not explicitly applied to IP relay portals at the time of the BTS Policy since WSPs were not required to provide IP relay service at that time.

151. The Commission notes that adoption of the W3C Guidelines was an encouragement in the Accessibility Policy and an expectation in the BTS Policy. Although neither policy made adoption a requirement, the Commission is of the view that it ought to be a requirement for IP relay service, given that the service is expressly designed for DHHSI persons. Accordingly, the Commission **directs** MRS providers, including WSPs, to ensure that any related web and mobile interfaces, including apps, meet the W3C Guidelines. MRS providers that provide IP relay service via a third-party service provider must ensure that the provider meets this requirement.

152. In light of the above-noted concerns raised by accessibility groups to improve the functionality of IP relay service, the Commission has identified the minimum functionality that is required of IP relay service – whether it is delivered through a mobile-friendly website, mobile app, or on a web interface (e.g. on home computer). Decisions on how that functionality is delivered to users should be based on consultations with DHHSI Canadians and accessibility groups.

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[17] VCO enables people who speak clearly, but are Deaf or hard of hearing, to read text of what the other (hearing person) is saying, typed by the MRS operator.

153. Accordingly, the Commission **directs** MRS providers to ensure that, regardless of whether their IP relay service is delivered on wireline or wireless networks, it meets the minimum requirements set out in Appendix 1. Requirement 1 must be met **as of the date of this decision**, while the remaining requirements must be met **within 12 months of the date of this decision**.

154. The Commission also **directs** Bell Canada et al., Cogeco, Eastlink, RCCI, SaskTel, Shaw, TCI, and Videotron to consult accessibility groups to determine how the minimum functionality requirements will be achieved for IP relay service, and to file a report with the Commission, **within six months of the date of this decision**, that describes the outcomes of discussions and that lists the accessibility groups that were consulted.

155. With regard to DWCC et al.'s request about VCO, given that both VCO and hearing carry over (HCO) are available through IP relay, the Commission considers that users making IP relay calls using a mobile-friendly web portal or an IP relay app must also be able to make HCO and VCO calls.

What should be done to improve the functionality of TTY relay service?

156. Given that minimum requirements 1 to 6 set out in Appendix 1 would improve the functionality of not only IP relay service, but also TTY relay service, the Commission **directs** MRS providers that have an obligation to offer retail TTY relay service to ensure that the service meets those requirements. Requirement 1 must be met **as of the date of this decision**, while requirements 2 to 6 must be met **within 12 months of the date of this decision**.

How should the Commission monitor the quality of MRS?

Positions of parties

157. DWCC et al. proposed that the Commission request quarterly reports to ensure compliance with standards. Bell Canada et al. and RCCI submitted that annual reporting would be more appropriate. Bell Canada et al. added that an authorized representative of an MRS provider could certify that Commission-imposed standards have been met, or include an explanation of which standards have not been met and why. RCCI added that historic reporting metrics should be maintained.

158. Neither Freedom Mobile nor Shaw opposed annual reporting; however, Shaw suggested that the Commission establish consistent reporting interval dates, since the current ad hoc reporting of MRS metrics makes it difficult for the company to schedule the deployment of the necessary resources. TCI indicated that, to the extent that the Commission determines that it is appropriate to implement a regulatory reporting mechanism, it would be reasonable to require annual reports indicating the number of calls received on an annual basis and the percentage of those calls that are answered in 20 seconds or less.

Commission's analysis and determinations

159. The Commission finds that annual reporting would be sufficient. Quarterly reporting would create an elevated administrative burden for which there is no clear evidence of need.

160. The Commission has taken into account the burden that an annual reporting requirement would impose on smaller MRS providers (e.g. resellers, small ILECs and VoIP providers) compared to larger ones, and finds that the imposition of such a requirement on only the large ILECs and large cable-based carriers[18] would be efficient and proportionate to its purpose, consistent with subparagraph 1(a)(ii) of the Policy Direction.

161. The Commission agrees with Bell Canada et al.'s suggestion that annual reports should include an explanation as to why any Commission-imposed standard was not met and when the TSP expects to come into compliance.

162. In addition, the Commission agrees with RCCI's suggestion that the historic reporting metrics (i.e. for the original indicators listed in Appendix 2 to this decision) should be maintained for regular reporting. Further, the Commission is of the view that regular annual reporting would provide TSPs with more certainty in reporting and would help the Commission monitor the quality of the MRS provided by the TSPs year over year.

163. In light of the above, the Commission **directs** Bell Canada et al., Cogeco, Eastlink, RCCI, SaskTel, Shaw, TCI, and Videotron to file with the Commission, **on an annual basis**, MRS quality of service data for all indicators listed in Appendix 2. Annual submissions are to cover the period of 1 January to 31 December and are to be submitted **by 31 January of the following year**. Reporting is to be broken down by

- type of MRS (e.g. IP relay service versus TTY relay service);
- wholesale versus retail provision of MRS; and
- wireline versus wireless operations.

164. In the event that any Commission-imposed quality of service standard is not met, the TSP is to explain why it was not met, how the provider will come into compliance, and when the provider will come into compliance.

165. TSPs have been reporting most of the indicators listed in Appendix 2 to the Commission on an ad-hoc basis. However, the Commission is adding the following:

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[18] Cable-based carriers are the former cable monopolies that also provide telecommunications services (e.g. wireline voice, Internet, data and private line, and wireless services).

- new sub-indicators[19] regarding call answer time and typing speeds and accuracy, which MRS providers will be required to meet annually, as discussed in paragraphs 117 and 128; and

- a new reporting requirement regarding the promotion of MRS, which is discussed later in this decision.

Are the TSPs' current efforts to promote MRS sufficient?

Positions of parties

Awareness of MRS among DHHSI individuals

166. Most TSPs agreed that the current approach to promotion and awareness of MRS is sufficient. Shaw submitted that, until recently, it had been seeing moderate growth in volumes of MRS calls, which led it to believe that there is sufficient awareness. However, RCCI submitted that it is difficult to accurately assess whether there is sufficient awareness and promotion of MRS among DHHSI Canadians, the wider Canadian population, or businesses or agencies that may receive MRS calls.

167. All the TSP interveners indicated that they promote MRS on their accessibility websites. For example, Bell Canada et al. submitted that Bell Canada has posted a video on its website in American Sign Language (ASL) and Langue des signes québécoise (LSQ) describing IP relay service. Shaw submitted that it is enhancing its Accessibility Services website to include more information on its text-based relay services.

168. However, DWCC et al. submitted that there is a general lack of promotion to those who are hard of hearing. They provided various anecdotes to demonstrate that Canadians learn about MRS through a variety of means, including word of mouth and some promotion by TSPs; however, not all DHHSI Canadians are aware of IP relay service. The CPSC echoed these concerns, submitting that it may be a reason why MRS call volumes are low.

169. Some individuals who participated in the online consultation submitted that there should be more awareness of TTY and IP relay services among DHHSI Canadians. However, other individuals indicated that there was sufficient awareness and that they have known about MRS or at least TTY relay service for a while.

Awareness of MRS among businesses and agencies that may receive MRS calls

170. DWCC et al. expressed concern that some businesses and government agencies are not sufficiently aware of MRS and, as a result, have been reluctant or have refused to continue with calls from MRS operators for privacy and security reasons (e.g. validating the identity of the caller). Similarly, 30% of Canadians who

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[19] In Appendix 2, call answer time is placed under indicator 5, while typing speed and accuracy are placed under indicator 10.

submitted comments during the online consultation indicated that they had encountered certain businesses and agencies that would not speak with an MRS operator. However, DWCC et al. presented anecdotally that one individual's experience has been mostly positive whenever calling government agencies, doctors, banks, or other organizations because the MRS operator would explain MRS to any unfamiliar person who was hesitant to receive the call.

171. TCI submitted that its operators have observed that people who receive MRS calls are generally aware of the service, and noted that its operators regularly educate first-time recipients of an MRS call.

Improving the promotion of MRS

172. In light of the decreasing number of IP relay calls in Canada, DWCC et al. submitted that increased marketing and promotion of MRS would be appropriate. In particular, they submitted that funding is needed for an education and awareness program for an IP relay app and RTT technologies, which would include instructional videos in ASL and LSQ. DWCC et al. also submitted that public awareness campaigns for MRS should be restarted, via visual media, newspapers, television, Internet, radio, and social media.

173. TCI submitted that it would be pleased to provide links to these campaigns on its website to assist with awareness, but did not envision providing funding for the initiatives.

174. Maple recommended that the Commission itself have an informative and easy-to-understand webpage on how to use MRS, including instructional videos in ASL and LSQ.

175. Other TSPs indicated that multiple groups are involved in marketing and promotion. RCCI submitted that promotional/awareness activities should be the joint responsibility of all parties, including accessibility groups and the Commission, while Cogeco noted that the more prominent accessibility groups have "frequently asked questions" sections and general literature on MRS on their websites.

Commission's analysis and determinations

176. In the Accessibility Policy, Telecom Regulatory Policy 2013-271 (the Wireless Code) and the BTS Policy, the Commission either required or encouraged TSPs to engage in promoting their products and services aimed at people with disabilities. In addition, the large TSPs that are mandated to offer MRS already have accessibility websites that promote MRS, the Commission promotes MRS on its website, and certain accessibility groups promote MRS.

177. Accordingly, the Commission considers that the current promotional efforts have been sufficient for the existing required services. However, the Commission finds that TSPs and accessibility groups should collaborate to promote new MRS features

and services, particularly when an IP relay app or mobile-friendly web portal is made available.

178. In regard to concerns that certain businesses or agencies do not accept MRS calls due to privacy and other concerns, this issue is largely outside the Commission's jurisdiction. However, certain institutions such as the Canada Revenue Agency have been modifying their policies to enable them to accept calls from MRS operators. Nonetheless, TSPs and accessibility groups should continue to promote MRS to third parties.

179. The Canadian Administrator of VRS has addressed this issue by preparing a form that VRS users can use to grant permission to involve VRS interpreters in their calls. Accessibility groups and TSPs could consider a similar approach.

180. In light of the above, the Commission encourages

- TSPs to continue their efforts to promote the current MRS on their websites and through their call centres as per the existing requirement that TSPs promote their accessibility-related services;
- TSPs, when introducing new MRS-related services or features, to publicize them on their websites and through their call centres, in consultation with DHHSI customers and the appropriate accessibility groups;
- accessibility groups to promote MRS; and
- TSPs and accessibility groups to continue to work to educate organizations that may receive MRS calls, and find proactive solutions to address privacy concerns.

181. Furthermore, it would be appropriate to require certain TSPs to report annually on their efforts to promote MRS. Accordingly, the Commission has included promotion of MRS as a topic to be addressed in the annual reports to be filed by Bell Canada et al., Cogeco, Eastlink, RCCI, SaskTel, Shaw, TCI, and Videotron, as set out in Appendix 2.

What is the future of MRS, in light of the transition to IP-based networks in Canada?

182. As networks transition from circuit-based public switched telephone networks to IP-based networks, there may be a negative effect on the quality and utility of TTY.

183. TTY was developed for legacy technology and was not designed for IP-based networks; in particular, there are major technical barriers to reliably supporting TTY transmissions over IP networks arising from issues such as dropped packets, distortion, and bandwidth use.[20] In Canada, both wireline and wireless carriers are

[20] TTY messages are transmitted via a series of tones that are converted into electrical signals and carried over the telephone line. When the message reaches its destination, the signals are converted back into tones

transitioning from legacy, circuit-switched networks to IP networks, such as LTE. While there are technical approaches to supporting TTY in wireline IP-based networks, this is not necessarily the case for wireless networks. In particular, TTY may not work at all in areas of Canada on mobile networks where those networks have transitioned to VoLTE.

184. In recognition of this transition, in Telecom Regulatory Policy 2017-182, the Commission directed wireless carriers to make the necessary changes in their networks to support next-generation 9-1-1 RTT by 31 December 2020.

185. The Commission recognizes that the transition is not only an issue in Canada. On 15 December 2016, the FCC amended its rules[21] to facilitate a transition from TTY technology to RTT as a reliable and interoperable universal text solution over wireless IP-based networks for DHHSI persons, but concluded that it would be premature to address the application of RTT to the wireline environment. The FCC also indicated that it was considering next steps for integrating RTT services into telecommunications relay services, the need for certain RTT features for deaf-blind persons, and a sunset date for TTY support on wireless networks.

Positions of parties

General comments

186. TSPs generally agreed that TTY is an increasingly obsolete technology that will likely be replaced by RTT. DWCC et al. expressed concerns about a phase-out of TTY, indicating that TTY remains essential, particularly for deaf-blind consumers.

187. TCI recommended that as new technologies are developed and, more importantly, adopted by DHHSI customers, the Commission should individually review these technologies through separate proceedings to examine whether or not they should be adopted as the new standard and whether or not these technologies should be subject to mandated provision by TSPs.

188. Bell Canada et al. added that the industry needs clear direction from the Commission on the adoption of RTT, and recommended that the Commission be prepared to adopt a transition plan to discontinue the use of TTY in favour of RTT in the coming years, with TTY ultimately being phased out.

189. RCCI added that it is important to ensure that customers are effectively transitioned to RTT so that all legacy TTY services can ultimately be eliminated.

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that represent the letters that appear on the receiving TTY unit's display screen. Dropped packets and distortion can result in lost or damaged tones which, in turn, can result in a lost or garbled message when the tones are converted to letters on the receiving end.

[21] *Transition from TTY to RTT Technology*, FCC Report and Order and Further Notice of Proposed Rulemaking 16-169.

Wireless networks

190. Bell Canada et al., Freedom Mobile, RCCI, SaskTel, and Videotron agreed that TTY does not work on VoLTE, and that RTT is a suitable replacement for TTY and/or TTY relay service. TCI also submitted that RTT will benefit all customers who use texting services, not just DHHSI customers.

191. Bell Canada et al., Freedom Mobile, and RCCI indicated that they expected wireless handsets with native support for RTT to become available for the Canadian market in the 2018 to 2019 time frame. TCI indicated that it was moving as quickly as possible to ensure that as soon as RTT-capable devices are on the market, it will be prepared to make RTT available to users of those devices.

192. TCI submitted that its network is currently able to support RTT. However, other TSPs indicated that RTT will not be ready until the Commission's December 2020 deadline to support next-generation 9-1-1 access.

193. Bell Canada et al. and RCCI recommended that the Commission ask the CRTC Interconnection Steering Committee (CISC) to develop a TTY to RTT migration plan for wireless networks.

194. Bell Canada et al. were of the view that one of the first technical considerations when implementing RTT relay service on wireless networks will be the development of a standard intercarrier network-to-network interface, which will enable the sending of RTT traffic to an RTT relay service centre. Bell Canada et al. added that a clear mandate to CISC to work on implementation issues would enable the industry to identify any other technical issues.

195. RCCI added that the most significant technical barrier to providing RTT before the full implementation of VoLTE is the gap in providing an RTT active session handover[22] from existing LTE networks to circuit-switched networks in use today. RTT is designed to work only on a packet-switched network due to this limitation.

196. Finally, Bell Canada et al. noted that in Telecom Regulatory Policy 2011-291, the Commission determined that ILECs should be able to meet their obligation to serve using fixed wireless technology in regulated areas and using either mobile wireless or wireline technology, including VoLTE, in forborne areas. Bell Canada et al. added that because TTY cannot be provided effectively over VoLTE and wireless devices will not necessarily support it going forward, if MRS via TTY continues to be a mandated service, ILECs would be prevented from using wireless technology to meet their obligation to serve. Bell Canada et al. requested that the Commission permit carriers that offer services over wireless IP technology to satisfy their MRS

[22] Handover is the process of transferring an active call or data session from one channel connected to the core network to another channel.

obligations using RTT instead of TTY, provided that backwards compatibility for existing TTY users[23] is ensured during the transition period.

197. Similarly, Freedom Mobile, which is a wireless (i.e. Type II) CLEC, specifically requested that WSPs that interconnect as a Type II CLEC be allowed to phase out TTY relay service and replace it with RTT relay service.

Rollout of RTT relay service in wireless networks

198. Bell Canada et al., Freedom Mobile, Shaw, and TCI indicated that they plan to roll out RTT relay service in the future, with TCI stating that once RTT becomes standardized on mobile devices in Canada, the company will move quickly to begin discussions with vendors to develop a new portal for RTT relay service users to connect to MRS operators.

199. DWCC et al. requested that RTT relay service be accessible and mobile, and that MRS providers include DHHSI Canadians in the alpha and beta testing stages.

Wireline networks

200. Bell Canada et al. were of the view that the transmission of TTY signals will be increasingly disrupted for wireline networks, thereby degrading service quality for TTY relay service end-users. In addition, several TSPs noted concerns that with the transition to RTT in the United States, TTY equipment will become increasingly unavailable in Canada.

201. Bell Canada et al. submitted that RTT on wireline networks will not be ready for some time since standards for wireline RTT have not yet been adopted by the industry. They recommended that the Commission ask CISC to monitor the development of RTT standards for wireline networks to determine when it would be appropriate to address the transition from TTY to RTT on these networks.

202. However, other TSPs submitted that TTY has been functioning on their IP wireline networks and will continue to function until RTT is implemented. They added that any technical barriers are manageable, generally through the use of analogue telephone adaptors or media gateway devices that would facilitate interconnectivity between IP-based and traditional telephone networks. TCI submitted that the current technological infrastructure, while difficult and costly to maintain due to its legacy components and scarcity of replacement parts, should remain functional for the next five to ten years, until RTT is fully developed and made available.

Commission's analysis and determinations

203. The Commission considers that the interventions discussed above have raised four sub-issues.

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[23] Backwards compatibility ensures that interoperability standards are met so that RTT end-users can seamlessly communicate with existing TTY end-users and vice-versa.

Is Commission intervention required to facilitate the implementation of RTT on wireless networks and the provision of RTT relay service on those networks?

204. The Commission finds that it will need additional information regarding the implementation of RTT relay service before determining whether intervention is required.

205. Parties on the record of this proceeding were of the view that, in Canada, there are technical issues to be addressed to facilitate the implementation of RTT on wireless networks, including the interworking of RTT between wireless carriers. Given CISC's mandate to develop technical solutions and address interconnection issues, the Commission requests that CISC evaluate (i) how RTT over mobile wireless networks could be implemented, (ii) within what timelines it could be implemented, and (iii) whether it is feasible to implement it. The Commission also requests that CISC support the development of a standard intercarrier RTT network-to-network interface. Accessibility groups are encouraged to participate in the CISC meetings.

206. The Commission requests that CISC submit a report with its recommendations **within 12 months of the date of this decision**.

207. Given that RTT may not be available in some WSPs' networks until 2020, it would be premature to impose a requirement on WSPs to support RTT relay service. However, with consumers increasingly opting for wireless over wireline telephone service, such a requirement may ultimately be necessary to ensure that DHHSI consumers have equitable access to wireless voice telephony services.

208. The Commission is also of the view that it is appropriate to require that any new text-based relay services, such as RTT relay service, once implemented, be subject to the same quality of service standards as existing MRS. In addition, RTT relay service needs to be developed in consultation with DHHSI Canadians and take into consideration the unique needs of deaf-blind users. Accordingly, the Commission **directs** Bell Canada et al., RCCI, Shaw, TCI, and Videotron to file, by **31 December 2019**, their plans and time frames for their mobile wireless operations to support an RTT relay service (either directly or by outsourcing the provision of the service to a third party). The reports are to describe (i) how RTT relay service would meet the minimum requirements set out in Appendix 1, and (ii) the consultations with persons with disabilities that have been undertaken.

209. Following receipt of the reports from CISC and from the above-noted WSPs, the Commission may, if appropriate, mandate the provision of RTT relay service.

Is Commission intervention required to facilitate the transition from TTY to RTT on wireline networks and the launch of RTT relay service on those networks?

210. Given that RTT standards for wireline have yet to be developed and that no TSP has indicated that the current wireline VoIP networks are incapable of continuing to support TTY and TTY relay service for the foreseeable future, the Commission finds

that it is premature to make any determinations with respect to RTT on wireline networks.

211. Nonetheless, the Commission requests that CISC monitor the development of RTT standards for wireline IP networks to determine when it would be possible to implement a wireline RTT relay service. The Commission requests CISC to submit an annual report, commencing **no later than two years after the date of this decision**, concerning the status of the development of wireline RTT standards, until the standards are sufficiently advanced to consider wireline RTT relay service implementation issues.

212. When the wireline RTT standards are sufficiently advanced, the Commission can then determine whether it would be appropriate to consider the transition from TTY to RTT relay service in wireline networks in a subsequent proceeding.

Should the Commission permit carriers that offer services using wireless IP technology to satisfy their MRS obligations using RTT instead of TTY?

213. With respect to requests by Bell Canada et al. and Freedom Mobile to meet MRS obligations using RTT instead of TTY, the Commission finds that it is premature to pronounce on either request, given that RTT relay service is not yet available on the market, and that no TSPs have indicated any concrete plans for rolling out the service.

214. Accordingly, the Commission is not, at this time, permitting carriers to satisfy their MRS obligations using RTT instead of TTY, but is instead postponing consideration of this issue to a future review of MRS.

215. However, as noted above, CISC and five TSPs will file reports in 2019, following which the Commission could, if appropriate, mandate the provision of RTT relay service. The service would need to meet the minimum requirements set out in Appendix 1.

216. If a TSP's network is technically unable to support TTY, the Commission is of the view that the company should have the option to seek relief from the requirement to provide TTY relay service. Accordingly, any TSP requesting relief from the obligation to provide TTY relay service must provide its plans for phasing out the service. The plans should include consultation with accessibility groups.

217. In order to ensure that all DHHSI individuals will continue to be able to communicate with other users of the telecommunications networks, any TSP requesting relief from the obligation to provide TTY relay service must demonstrate that its IP relay service is, at a minimum, functionally equivalent to its existing TTY relay service and meets the minimum requirements set out in Appendix 1.

Should TTY relay service be phased out?

218. The Commission is of the view that RTT has the potential to enhance the ability of MRS to provide functionally equivalent telephone service, while reducing reliance on some forms of MRS.

219. However, the Commission finds that it is premature to make a determination as to when TTY relay service should be phased out, since there is no substitute service available in wireline networks.

220. Accordingly, the Commission is making no determinations about the phase-out of TTY relay service at this time.

221. The Commission encourages wireless carriers that currently offer TTY relay service to continue to permit subscribers to access the service for as long as possible on their networks, and to have a plan to transition to new relay services that work more seamlessly on VoLTE networks.

What is the appropriate time frame for a review of MRS in the future?

Positions of parties

222. TCI submitted that future MRS reviews should be carried out only as needed, based on marketplace developments that warrant attention or assessment. It submitted that regularly scheduled regulatory reviews when there are no new developments are unnecessary and distract key resources from their core functions, namely providing accessibility services to customers.

223. Bell Canada et al., RCCI, and SaskTel proposed to have another review in five years. RCCI submitted that five years is consistent with the general cycle of policy review by the government. It provides an opportunity to effectively evaluate what is or is not working, and incorporate technological advancements. Bell Canada et al. submitted that five years is appropriate, unless a change in circumstances requires a review at an earlier point in time.

224. Cogeco submitted that the next MRS review should take place at the same time as or shortly after the next VRS review. Shaw proposed a review within the next two to three years to see if declines in MRS use continue or if there are new technological developments that should be considered. DWCC et al. proposed to have a review in three years to ensure that (i) IP relay service is progressing with technological advances, (ii) suggestions for improvements and efforts have been put into place, and (iii) feedback is given regarding updates or upgrades. Freedom Mobile submitted that three to five years would be an appropriate time frame for the next review.

Commission's analysis and determinations

225. The Commission is of the view that there is value in having periodic reviews of the MRS regulatory framework, since a regular review cycle provides the opportunity to

discuss issues or challenges in a public forum. This will enable the Commission to evaluate whether the requirements set out in this decision to improve the quality of MRS have been successful, and to determine if additional Commission intervention is required. In addition, since TTY relay service is based on technology that is becoming obsolete and does not function well in IP-based networks, future reviews will be required to determine when it will be appropriate to phase out the requirement to provide TTY relay service over wireline networks.

226. Following the receipt of reports in 2019 from CISC regarding RTT and from the five WSPs listed in paragraph 208 regarding RTT relay service, the Commission will likely begin the process of considering an RTT requirement for WSPs; however, a complete review of the MRS regulatory framework would not be necessary to mandate RTT relay service. The Commission considers that a review of the MRS regulatory framework approximately two to three years after RTT relay service has been implemented would allow for sufficient time to consider the impact of this service and adjust the framework accordingly.

227. In light of the above, the Commission considers that a review period of five years will provide sufficient time for changes introduced as a result of this decision to take effect, allow for the necessary data to be collected, and provide sufficient time to consider the impact of the anticipated RTT relay service.

228. Accordingly, the Commission is planning to review MRS in five years, unless marketplace developments or a change in circumstances require a review at an earlier point in time.

Other matters

Commission's analysis and determinations

229. The Commission considers MRS providers to be TSPs and, accordingly, all MRS providers are required to provide access to 9-1-1 service. Accordingly, the Commission reminds all providers of MRS that MRS provides DHHSI consumers with equitable access to voice telephony services, which includes access to 9-1-1.

230. The Commission determines that the following concerns and requests suggested by accessibility groups are outside the scope of this proceeding:

- TTY access from payphones;
- difficulty in repairing/obtaining TTY equipment;
- gender of MRS operators; and
- establishment of an Accessibility Office by the Commission and other departments.

Policy Direction

231. The Policy Direction states that the Commission, in exercising its powers and performing its duties under the Act, shall implement the policy objectives set out in section 7 of the Act, in accordance with paragraphs 1(a), (b), and (c) of the Policy Direction. The determinations made in this decision are consistent with the Policy Direction.

232. In all cases in this decision where the Commission has imposed regulatory requirements on TSPs, it has done so where market forces cannot be relied upon to achieve the policy objectives. In this regard, the Commission considers that persons with disabilities are generally not able to influence the market sufficiently to obtain accessible telecommunications products and services. In accordance with subparagraphs 1(a)(i) and (ii) of the Policy Direction, where the Commission has imposed regulatory requirements in this decision, the Commission has used measures that are efficient and proportionate to their purpose and that interfere with the operation of competitive market forces to the minimum extent necessary to meet the policy objectives.

233. In this decision, the Commission has also used leading Canadian human rights principles that recognize that equality is a fundamental value and a central component of the public interest, and has acted in a manner that is consistent with the *Canadian Charter of Rights and Freedoms*.

234. In compliance with subparagraph 1(b)(i) of the Policy Direction, the policy objectives listed in paragraphs 7(a), (b), (c), (f), and (h) of the Act are advanced by the determinations set out in this decision.

Secretary General

Related documents

- *Next-generation 9-1-1 – Modernizing 9-1-1 networks to meet the public safety needs of Canadians*, Telecom Regulatory Policy CRTC 2017-182, 1 June 2017
- *Review of the regulatory framework for text-based message relay services*, Telecom Notice of Consultation CRTC 2017-33, 2 February 2017; as amended by Telecom Notice of Consultation CRTC 2017-33-1, 1 June 2017
- *Application of regulatory obligations directly to non-carriers offering and providing telecommunications services*, Telecom Regulatory Policy CRTC 2017-11, 17 January 2017; as amended by Telecom Regulatory Policies CRTC 2017-11-1, 10 July 2017; and 2017-11-2, 17 July 2017
- *Modern telecommunications services – The path forward for Canada's digital economy*, Telecom Regulatory Policy CRTC 2016-496, 21 December 2016

- *Review of wholesale wireline services and associated policies*, Telecom Regulatory Policy CRTC 2015-326, 22 July 2015; as amended by Telecom Regulatory Policy CRTC 2015-326-1, 9 October 2015
- *Video relay service*, Telecom Regulatory Policy CRTC 2014-187, 22 April 2014
- *The Wireless Code*, Telecom Regulatory Policy CRTC 2013-271, 3 June 2013
- *Network interconnection for voice services*, Telecom Regulatory Policy CRTC 2012-24, 19 January 2012
- *Obligation to serve and other matters*, Telecom Regulatory Policy CRTC 2011-291, 3 May 2011; as amended by Telecom Regulatory Policy CRTC 2011-291-1, 12 May 2011
- *Accessibility of telecommunications and broadcasting services*, Broadcasting and Telecom Regulatory Policy CRTC 2009-430, 21 July 2009; as amended by Broadcasting and Telecom Regulatory Policy CRTC 2009-430-1, 17 December 2009
- *Bell Canada et al.'s application to review and vary Telecom Decision 2008-17 with respect to negotiated agreements*, Telecom Regulatory Policy CRTC 2009-19, 19 January 2009
- *Revised regulatory framework for wholesale services and definition of essential service*, Telecom Decision CRTC 2008-17, 3 March 2008
- *Price cap framework for large incumbent local exchange carriers*, Telecom Decision CRTC 2007-27, 30 April 2007
- *List of services within the scope of the proceeding on forbearance from the regulation of local exchange services*, Telecom Decision CRTC 2005-35, 15 June 2005; as amended by Telecom Decision CRTC 2005-35-1, 14 July 2005
- *Forbearance from regulation of local exchange services*, Telecom Public Notice CRTC 2005-2, 28 April 2005
- *Regulatory framework for second price cap period*, Telecom Decision CRTC 2002-34, 30 May 2002; as amended by Telecom Decision CRTC 2002-34-1, 15 July 2002
- *Quality of service indicators for use in telephone company regulation*, Telecom Decision CRTC 97-16, 24 July 1997
- *Price cap regulation and related issues*, Telecom Decision CRTC 97-9, 1 May 1997
- *Maritime Telegraph and Telephone Company Limited – Revenue Requirement for 1994*, Telecom Decision CRTC 94-9, 29 April 1994
- *Inquiry into Telecommunications Carriers' Costing and Accounting Procedures – Phase II: Information Requirements for New Service Tariff Filings*, Telecom Decision CRTC 79-16, 28 August 1979

Appendix 1 to Telecom Regulatory Policy CRTC 2018-466

Minimum requirements for MRS

1. 45 WPM typing speed, with 95% accuracy, for each MRS operator
2. 85% of calls each month responded to by a live MRS operator within 10 seconds
3. Compatibility with Braille displays to enable deaf-blind Canadians to access MRS
4. Ability for MRS operators to reconnect with the DHHSI consumer if they become disconnected, but the hearing person is still connected to the operator
5. Ability to make VCO and HCO calls
6. Notification alerts of incoming calls and missed calls (e.g. vibration or flashing lights)
7. Ability for DHHSI users to receive messages via text or email and notification alerts for those messages
8. Ability for layouts to automatically adjust based on screen size and resolution so that MRS is accessible regardless of the device used to access it
9. Option for customization of the screen (e.g. background, colour, or fonts)
10. Compliance with the W3C Guidelines

Note: Requirements 7, 8, 9, and 10 do not apply to TTY relay service.

Appendix 2 to Telecom Regulatory Policy 2018-466

Annual indicators and reporting requirements for MRS

For indicators 1 to 13 below, reporting is to be broken down by

- type of MRS (e.g. IP relay service versus TTY relay service);
- wholesale versus retail provision of MRS; and
- wireline versus wireless operations.

Indicators regarding calls

1. Total number of incoming calls[24] (by month)
2. Total number of calls relayed (by month)
3. Total number of calls relayed per month sorted by (i) day, (ii) hour,[25] and (iii) language
4. Number of abandoned or unanswered calls per month sorted by (i) day, (ii) hour,[26] and (iii) language
5. Wait times (averaged over one month):
   (i) Average wait time
   (ii) Percentage of calls answered within 20 seconds
   (iii) Percentage of calls answered within 10 seconds
6. Average call duration (averaged over one month)

Indicators regarding customers

7. Total number of MRS users (actual or estimated) [by month, where possible]
8. Total number of customer complaints (per year) categorized by type of complaint (e.g. wait times or operator-related)

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[24] "Incoming calls" refers to all calls received at the call centre that require an operator. This includes calls placed and received by the MRS user.

[25] Hourly call data is to be detailed by hour starting on the hour, for example, 6:00.

[26] Hourly call data is to be detailed by hour starting on the hour, for example, 6:00.

Indicators regarding MRS operators

9. Number of operators and operator hours per week sorted by (i) English operators, and (ii) French operators. If operators perform multiple functions, for example, provide general customer service in addition to providing relay services, the number of operator hours should be specific to the time spent on providing relay services.

10. Typing speeds and accuracy[27]

    (i) Typing speed for each operator

    (ii) Transcription accuracy for each operator

11. Average hourly wage for (i) English operators, and (ii) French operators

12. Qualifications / screening criteria for hiring process

Indicators regarding expenditures

13. Monthly breakdown of expenditures associated with the provision of MRS, detailing

    (i) Itemized list of capital assets associated with IP and TTY relay services, and the annual equivalent cost that would be applied over the lifespan of the asset, or, alternatively, the depreciation associated with the capital cost and financial expenses

    (ii) Direct operating expenses, with a detailed breakdown for operator and network costs

    (iii) Third-party expenses, detailing what the expenses cover (i.e. the terms of the contract). This could include the agreed-upon quality of service standards, white-label services or products, or the provision of branded websites and user interfaces

Reporting requirements regarding promotion

As per paragraph 181 of this decision, information on the MRS provider's efforts to

(i) promote current MRS;

(ii) publicize new MRS; and

(iii) educate organizations and address privacy concerns.

[27] MRS providers may measure typing speeds once a year using a statistically random sample of operators.